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A Dissertation

Presented to

the Faculty of the Department of Education

East Tennessee State University

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

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by

Joseph Franklin Miller

August 1978

APPROVAL

This is to certify that the Advanced Graduate Committee of

JOSEPH FRANKLIN MILLER

met on the

12th day of July, 1978.

The committee read and examined his dissertation, supervised his defense of it in an oral examination, and decided to recommend that his study be submitted to the Graduate Council and the Dean of the School of Graduate Studies in partial fulfillment of the requirements for the degree Doctor of Education.

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THE EFFECTS OF FOUR PROXEMIC ZONES ON THE PERFORMANCE OF SELECTED SIXTH-, SEVENTH-, AND EIGHTH-GRADE STUDENTS

An Abstract

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by

Joseph Franklin Miller

August 1978

Joseph Franklin Miller, B.S., East Tennessee State University, March 1973
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THE EFFECTS OF FOUR PROXEMIC ZONES ON THE PERFORMANCE OF SELECTED SIXTH-, SEVENTH-, AND EIGHTH-GRADE STUDENTS

Purpose. The problem of this study was to assess the effects of four proxemic zones (intimate, personal, social, and public) on the performance of randomly selected sixth-, seventh-, and eighth-grade students from East Tennessee State University Laboratory School.

Method. Literature was reviewed in order to define the concept of proxemics, to present evidence of the importance of proxemics in human cultures, and to provide specific educational research findings dealing with the concept of proxemics.

The 120 subjects of the study were randomly selected from the sixth-, seventh-, and eighth-grade population of the East Tennessee State University Laboratory School. The subjects were randomly assigned to four treatment groups and one control group. The four treatment groups received instruction, at varying distances, on the purposes, functions, and organization of the United Nations. The control group received a pseudo-treatment to control for "Hawthorne Effect." The pseudo-treatment consisted of viewing two films unrelated to the United Nations instruction.

At the conclusion of a thirty-minute instructional period each group was administered a post-test. The post-test was a twenty-item objective questionnaire concerning the purposes, functions, and organization of the United Nations.

Differences between means of post-test scores of the five groups were tested for statistical significance in a one-way analysis of variance. Pair-wise comparisons between groups were tested by a Newman-Keuls statistical technique. The .05 level of significance was adopted in all cases.

Results of the data analysis indicated that the mean post-test scores of the students instructed in the four proxemic zones were significantly superior to the mean post-test score of the control group. The mean for students instructed in the intimate proxemic zone was significantly superior to the means for students instructed in the other three proxemic zones. No significant differences were analyzed in other pair-wise comparisons.

Summary. Results of this study did not provide absolute guidelines for distances in which instruction should be provided. The fact that there was no evidence of differences in the effectiveness of instruction in the personal, social, and public proxemic zones, does not mean that there are no conditions under which instruction in these zones might be more effective. However, the instruction presented in the intimate proxemic zone proved to be the most effective when compared to presentations made in every other proxemic zone.

Conclusions. The results of the experiment provided evidence that the effectiveness of instruction was greatest when presented in the intimate proxemic zone. An examination of post-test means indicated progressively decreasing means for the personal, social, and public proxemic zones--the scores being 15.79, 15.46, and 14.54, respectively. A tentative proposition indicated by this array of means is: the closer instructors distance themselves to students, the more effective the instruction will be.

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Dissertation prepared under the guidance of Dr. Gem Kate Greninger, Dr. Albert Hauff, Dr. Ted Cobun, Dr. Phil Wishon, and Dr. Lloyd Graunke.

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Chapter 1

INTRODUCTION

The principles for designing spaces that will maintain a healthy density, a healthy interaction, a proper amount of involvement and a continuing sense of ethnic identification is one of man's most critical needs.[1] This need led Edward T. Hall, in 1969, to coin the word "proxemics" and to define it as a non-verbal "hidden dimension" in communication. The definition of proxemics as viewed by Hall was:

> The study of how man communicates through structuring microspace--the distance that man consciously or unconsciously maintains between himself and another person while relating physically to others with whom he is interacting.[2]

As Hall pointed out, "space communicates," moreover, man has carried within himself a number of hidden zones which elicited different responses as boundaries to those zones are crossed. The behavior appropriate for each zone, the tone of voice used, and the distance for each boundary vary among different groups in the same or different cultures.[3]

Although the importance of proxemic behavior has been treated in psychological literature, its consequences for educational practice have

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[1]Edward T. Hall, The Hidden Dimension (New York: Anchor Books, 1969), p. 117.

[2]R. F. Forston and others, "The Dynamics of Space," Journal of Communications, XVIII (June, 1968), p. 109.

[3]Edward T. Hall, "The Language of Space," Landscape, X (1960), p. 41.

not been studied. This study is an attempt to apply knowledge generated by previous research to classroom practice.

Ledford defined proxemics as the ability of learners to judge acceptable, critical, physical and social distances which influence them, and as their physical and social distance influence others.[4] He viewed proxemics as a vital component of the superstructure of learner analysis, and he stated that:

> Learners project physical and social distances between themselves and others in the act of communicating. Learners vary in the ability to judge and penetrate these distances, and vary in their ability to extend their own personal fields to optimal limits. Learning events should be designed so as to allow the learners to operate optimally in their own field in relation to others.[5]

One of the key procedures in developing a successful instructional program is the effective analysis of the individual student's learning style. Many educators believe that stimulating teachers or relevant instructional topics, materials, or procedures will result in learning.[6] While it is true that a "dramatic" teacher, an exciting presentation, or an assignment in the "real" world may enhance learning in a given instance or for an even longer period on occasion; that teacher and those media or assignments would be more successful if individual learning styles were consciously used. The responsive chords of learning style are struck too

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[4]Bruce Ledford, "The Synthesis of a Technique of Comprehensive Analysis of Individual Learners" (Doctoral dissertation, East Tennessee State University, 1975), p. 130.

[5]Ledford, p. 130.

[6]Rita Dunn and Kenneth Dunn, Educator's Self-Teaching Guide to Individualizing Instructional Programs (West Nyack, New York: Parker Publishing, 1975), p. 74.

infrequently through an occasional insight by a sensitive, caring teacher.[7]

Of special significance to the present study was the delimiting of an optimum distance for classroom instruction. Is there a distance at which the teacher is best understood by the student? Is there a general proxemic condition for massed learners, or is the condition an individual one? Are there undesirable distances for classroom instruction, either too near or too far? Is the concept of proxemics a relevant variable in educational practice? These proxemic cues are reported and discussed in psychological literature and may be relevant to the classroom.

The Problem

Statement of the Problem

The problem of this study was to assess the effects of four proxemic zones (intimate, personal, social, and public) on the performance of randomly selected sixth-, seventh-, and eighth-grade students from East Tennessee State University Laboratory School.

Hypotheses

The following hypotheses were formulated:

H1: All treatment groups will produce a post-test mean that is significantly superior to the control group post-test mean.

H2: The post-test mean of students instructed in the intimate proxemic zone will be significantly superior to the post-test mean of

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[7]Dunn, p. 75.

students instructed in the personal, social, and public proxemic zones.

H3: The post-test mean of students instructed in the personal proxemic zone will be significantly superior to the post-test mean of students instructed in the social and public proxemic zones.

H4: The post-test mean of students instructed in the social proxemic zone will be significantly superior to the post-test mean of students instructed in the public proxemic zone.

Significance of the Study

In light of the research findings available in the area of proxemics, several generalized statements can be offered about the significance of assessing the effects of proxemics on the behavior and performance of students and teachers in the classroom setting. Teachers and children who place themselves closer to each other may be physically exhibiting a desire for greater involvement, contact, increased social intercourse and communication. More dominant children would naturally place themselves closer to the teacher and to other students. Children who place themselves at the head of rectangular tables and other seating arrangements may be regarded as leaders by the other children. Teachers who distance themselves closer to children are more likely to be judged by the children as friendly, talkative, and intimate.[8]

Teachers and students who keep others at greater conversational distances may be providing one behavioral index of introvertive personalities. The establishment of greater distances may be an index of a

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[8] E. Sherman, "Listening Comprehension as a Function of Proxemic Distance and Eye-Contact," Graduate Research in Education and Related Disciplines, VII (Fall, 1973), pp. 5-34.

fear of rebuke on the part of the child, and teachers who notice this attitude on the part of some of their students may want to desensitize this attitude through the gradual establishment of closer distances. The establishment of closer distances on the part of children may be indicative of a posture of approval-seeking. Teachers and students who place themselves closer to someone they are addressing may be exhibiting the degree of their liking for the addressee, as well as a positive attitude of warmth and friendliness. It is likely that children who place themselves closer to the teacher in naturalistic classroom settings are placing greater stress upon the value of expressive contact with the teacher.[9]

It seems that one of the functions of distance in interpersonal interactions is to keep away unwanted social intercourse--a kind of barrier to communication. This implies that, under varying conditions of distance, communication either becomes more intensified or more remote. In educational settings it is important to be able to assess the optimum distances for presenting instruction. With the ability to determine optimum classroom distances, the teacher should be able to more effectively present instructional messages and, thus, increase the performance of students.

One of the many roles of a supervisor is to be competent to apply techniques of learner analysis. A supervisor is more effective when able to train teachers in techniques of learner analysis. If proxemics is important in the teaching/learning process, it follows that the supervisor should become as familiar as possible with the effects of proxemics on the

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[9]Sherman, p. 18.

performance of students.

One of the negative characteristics of learner analysis is the lack of substantial experimentation into the effects of proxemics upon the performance of students. Physical distance may be as important to the learning process as any of the other areas considered necessary for analysis.

In summary, the significance of the present study of proxemics was indicated by the fact that students and teachers vary in their placement from one another. As distances vary, the effectiveness of communication may vary. It is necessary, then, for teachers, supervisors, and other educators to be competent to apply techniques of proxemic analysis as they relate to individual student's learning styles. The lack of substantial research into the effects of proxemics in classroom settings gives further impetus for conducting this research.

Assumptions

It was assumed for the purposes of this study that age and grade level were highly correlated. No determination was made of the subjects' actual ages.

Delimitations of the Study

The study was limited by the fact that:

1. A male instructor presented content material to all groups. No attempt was made to assess the effects of a female presenter on the performance of the subjects.

2. The lecture/discussion method was utilized in presenting the instructional material to all groups. No attempt was made to

determine the effects of other teaching styles on the performance of the subjects.

3. The content material presented to all groups was held constant. No determination was made of the effects of presenting other types of content material to the sample groups.

4. The population of the East Tennessee State University Laboratory School utilized in the study may be significantly different from the population of other schools in Upper East Tennessee; thereby, possibly limiting generalization of outcomes to other schools.

Definitions of Terms

Body Image

Body image is a person's concept of his own body which grows out of his personality. It is built on prior sensations and affects the interpretation of current sense data.[10]

Dyad

A dyad is generally defined as two units considered as one. In proxemic studies a dyad usually refers to the interpersonal interaction between two individuals.

ETSU Laboratory School

The ETSU Laboratory School is located on the campus and performs the regular functions of a public elementary and high school. Its textbooks and instruction meet Tennessee state regulations. A co-equal

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[10]M. J. Horowitz, "Body Image," Archives of General Psychiatry, XIV (1966), p. 456.

function of the laboratory school is providing research opportunities for the ETSU faculty and students.

Intimate Proxemic Zone

In the near phase of the intimate proxemic zone (zero to six inches), another's presence is overwhelming. This is the distance for love-making, wrestling, comforting, and protecting. In the far phase of the intimate proxemic zone (six to eighteen inches), the head appears very large and some features appear distorted. Within this distance, people converse intimately with each other.[11]

Kinesics

Kinesics deals with the science of bodily communication. Kinesics involves the analysis of gestures, movements, and positions of the body according to a system closely akin to the verbal system.[12]

Olfaction

Olfaction is defined as the act of smelling.

Personal Distance

Personal distance may be defined as the area immediately surrounding the individual in which the majority of interactions with others take place.[13]

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[11]Hall, The Hidden Dimension, p. 164.

[12]R. L. Birdwhistell, Introduction to Kinesis (Louisville: University of Louisville Press, 1952), p. 37.

[13]K. B. Little, "Personal Space," Journal of Experimental Social Psychology, I (1965), p. 237.

Personal Proxemic Zone

In the near phase of the personal proxemic zone (one and one-half to two and one-half feet) physical features are very apparent. Holding hands is done in this zone. In the far phase of the personal proxemic zone (two and one-half feet to four feet) physical contact is less likely to occur, but the features of another person are clear to the observer. People discuss personal problems in this zone.[14]

Proxemics

Proxemics has been defined by its major theorist, Edward T. Hall, as "the study of how man unconsciously structures microspace--the distance between men in conduct of daily transactions, the organization of space in his houses and buildings, and ultimately the layout of his towns."[15]

Public Proxemic Zone

In the near phase of the public proxemic zone (twelve to twenty-five feet), the body of another person is visible, but details of the face are not. Formal styles of language are appropriate. A speaker addressing an audience is an example of communication in this zone. In the far phase of the public proxemic zone (over twenty-five feet), details of facial and bodily movement are extremely difficult to see. This distance occurs between an important public figure, for instance, a political personality and an audience.[16]

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[14]Hall, The Hidden Dimension, p. 164.

[15]Hall, The Hidden Dimension, p. 160.

[16]Hall, The Hidden Dimension, p. 168.

Shoulder Orientation

Shoulder orientation refers to the position in which two individuals stand when communicating. The range of shoulder orientation in the study of proxemics consists of face-to-face arrangement to back-to-back arrangement with varying positions between these maximum and minimum arrangements.[17]

Social Proxemic Zone

In the near phase of the social proxemic zone (four to seven feet) touching is not possible. Personal business and social gatherings are characteristic of this zone. The far phase of the social proxemic zone (seven to twelve feet) allows the observer total vision of another person's body. Formal business is typical of communication in this zone.[18]

Steinzor Effect

The "Steinzor Effect" in general, states that opposite (face-to-face) seating facilitates verbal interaction more than side seating.[19]

Territoriality

The basic definition of territory and territoriality is stated by Hediger who defined territory as that area which is personalized

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[17]Edward T. Hall, "A System for the Notation of Proxemic Behavior," American Anthropologist, LXV (1963), pp. 1008-1009.

[18]Hall, The Hidden Dimension, p. 167.

[19]B. Steinzor, "The Spatial Factor in Face-to-Face Discussion Groups," Journal of Abnormal and Social Psychology, VL (1950), pp. 552-555.

(rendered distinctive) and defended by the owner.[20] Lyman and Scott distinguished four types of territory in human societies: public, interactional, home, and body.[21]

Organization of the Study

The study was organized into five chapters. Chapter 1 contains an introduction to the study, statement of the problem, research hypotheses, significance of the study, assumptions of the study, and delimitations of the study. Definitions of terms and organization of the study are also included.

A review of the related literature is presented in Chapter 2.

Procedures by which the study was conducted are contained in Chapter 3.

An analysis of the findings of the study is included in Chapter 4.

Chapter 5 includes the summary, conclusions, and recommendations of the study.

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[20] H. Hediger, "The Evolution of Territorial Behavior," in S. L. Washburn (ed.), Social Life in Early Man (New York: Viking Fund Publications in Anthropology, 1961), pp. 34-57.

[21] S. M. Lyman and M. B. Scott, "Territoriality: A Neglected Sociological Dimension," Social Problems, XV (1967), pp. 236-249.

Chapter 2

REVIEW OF RELATED LITERATURE

Introduction

There now exists literature which treats the importance of non-verbal behavior in social interaction. These reports provide evidence of the importance of proxemics. With regard to proxemics, there is considerable support for the proposition that the human animal erects a kind of interpersonal bubble which, when intruded upon, has severe consequences both for the intruder and the person intruded upon. Human proxemic behavior has been shown to be a function of dominance, leadership, introversion-extroversion, eye-contact, fear of rebuke and approval-seeking, positive attitude toward the addressee in a dyad, sex, and age. Even in sub-human forms of life, the effects of territoriality are both consequential and profound.

The following sections give the background for this research: Conceptual Background and Proxemical Variables.

Conceptual Background

Katz first coined the term "personal space" and compared it to a snail shell.[1] The concept was implied in Stern's "personal nearness"[2]

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[1] D. Katz, Animals and Men (New York: Longmans, Green, 1937), p. 13.

[2] W. Stern, General Psychology (New York: Macmillan, 1938), p. 156.

and Lewin's "life space."[3] Lewin touched on the idea of such a psychological space by presenting the idea of "social distance" as spacing related to different layers of the personality and the penetrability of these layers as a function of culture.[4]

Several analogies have been used to depict the concept of personal space (proxemics). People were seen as being surrounded by an "aura,"[5] an "ideal sphere,"[6] or "soap-bubble worlds."[7] Hall visualized personal space as a series of spheres represented by intimate, personal, social, and public distances.[8] Personal space was considered as a series of fluctuating concentric globes of space, each identifying a region for certain types of interaction.[9] However, personal space was not seen as spherical in shape but as a contour with larger spatial demands in front than in back.[10] Goffman explained this phenomenon as being due to the

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[3] K. Lewin, Dynamic Theory of Personality (New York: McGraw-Hill, 1935), p. 14.

[4] K. Lewin, "Some Social-Psychological Differences Between the United States and Germany," in G. W. Lewin (ed.), Resolving Social Conflicts (New York: Harper and Brothers, 1956), pp. 3-33.

[5] Stern, p. 156.

[6] G. Simmel, in K. Wolff (ed.), The Sociology of George Simmel (Glencoe Free Press, 1950), p. 179.

[7] J. Von Uexkull, "A Stroll Through the Worlds of Animals and Men," in C. Schiller (ed.), Instinctive Behavior (New York: International Universities Press, 1957), p. 5.

[8] Edward T. Hall, The Hidden Dimension (New York: Anchor Books, 1969), pp. 162-165.

[9] K. B. Little, "Personal Space," Journal of Experimental Social Psychology, I (1965), p. 238.

[10] E. Goffman, Relations in Public (New York: Basic Books, 1971), p. 152.

fact that people generally respect one's instrumental needs; that is, people avoid blocking another's arm movement, line of vision or conversation. An individual, therefore, commands more space at his front than at his back or sides.[11]

Portable Territory

Personal space has also been charactized as a "portable territory" which is carried with the individual.[12] Horowitz and others felt that the idea of personal space started with the two meanings of space presented in the territoriality of Hediger.[13] The first meaning of space was in reference to territory. This was a geographical and the most familiar use of the term. The second meaning involved space as a psychological attribute or characteristic. This referred to the characteristic spacing among individual group members.

There was considerable debate about the definition of "territory and territorality" but Hediger defined territory as that area which is personalized (rendered distinctive) and defended by the owner.[14] Lyman and Scott distinguished four types of territory in human societies: public, interactional, home, and body.[15] Sommer regarded personal space as being the territories encompassing the body, the most private spaces

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[11]Goffman, p. 159.

[12]R. Sommer, Personal Space (Englewood Cliffs, New Jersey: Prentice-Hall, 1969), pp. 43-53.

[13]M. J. Horowitz and others, "Body Buffer Zones," Archives of General Psychiatry, XI (1964), p. 651.

[14]H. Hediger, Wild Animals in Captivity (London: Butterworths, 1950), p. 23.

[15]S. M. Lyman and M. B. Scott, "Territoriality: A Neglected Sociological Dimension," Social Problems, XV (1967), pp. 236-249.

belonging to an individual.[16]

Proxemics is clearly a form of territory but is distinguishable from the same in that it expands and contracts under various conditions and often has no fixed geographic reference points.[17] It is similar to the concept of territory in the sense that by definition it is "personalized": each individual has a distinctive personal space. Since there exists no visible boundaries or markers, such as those used in the defense of territories, defense of personal space must rely on gestures, postures, and bodily location indicative of the invisible boundaries.[18] One also uses such verbalizations as "keep at arms length" or "get off my back" to keep people at a physical or psychological distance.

Physical Concept

The operational concept of personal space, as distinct from the previously described psychological concept, is "the distance that the organism customarily places between itself and other organisms."[19]

Animal distance. Hediger identified a number of spacing distances in animals.[20] There are the interspecies spacing mechanisms of flight and critical distance in animals. Flight distance is that approach distance which will cause another animal to flee. Critical distance is the distance at which the animal will fight rather than flee. Social and

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[16]Sommer, Personal Space, p. 44.

[17]R. Sommer, "Studies in Personal Space," Sociometry, XXII (1959), pp. 247-260.

[18]Sommer, Personal Space, p. 51.

[19]Sommer, "Studies in Personal Space," p. 247.

[20]Hediger, Wild Animals, p. 48.

personal distances are intraspecies spacing mechanisms. Social distance "is the maximum distance that individuals of one society will move from one another . . ."[21] Personal distance is the characteristic spacing maintained by non-contact species among themselves. A special case of personal distance is "individual distance" which is that area around an animal within which the approach of another animal is met with either avoidance or attack.[22]

Spacing among social groups has been conceptualized as a function of "synagonistic" or cohesive forces which draw group members together and "antagonistic" forces which tend to separate neighboring individuals through "mutual rivalry."[23]

Crook proposed a three factor theory to explain this spacing mechanism in birds:

1. Arrival distance--this is a function of the social tendency of approach which leads to:

2. Settled distance--this is a balance of social approach tendencies and the avoidance of infringing on individual distances.

3. Distance after departure--this is affected by attention to the movements of other members of the group.[24]

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[21]H. Hediger, "The Evolution of Territorial Behavior," in S. L. Washburn (ed.), Social Life in Early Man (New York: Viking Fund Publications in Anthropology, 1961), p. 41.

[22]Hediger, Wild Animals, p. 53.

[23]V. C. Wynne-Edwards, Animal Dispersion in Relation to Social Behavior (New York: Hafner, 1962), p. 121.

[24]J. H. Crook, "The Basis of Flock Organization in Birds," in W. H. Thorpe and O. L. Zangwill (eds.), Current Problems in Animal Behavior (Cambridge: Cambridge University Press, 1961), pp. 125-149.

Human distance. Human beings still maintain personal and social distance; however, for the most part flight and critical distance reactions are no longer part of their behavioral repertoire.[25] Little attributed this to man's predatory and social nature.[26] Hall described four distances maintained by humans.[27] Each has a near and a far phase. They are:

1. Intimate distance--the distance for love-making and close relationships.

2. Personal distance--the distance consistently separating members of a non-contact species. A non-contact species refers to those animals in which bodily contact is not a part of their distance repertoire.

3. Social distance--the distance for formal and social interactions.

4. Public distance--the distance normally maintained around public figures.

Similar to Little's concentric globes,[28] the first three distances are in the "circle of involvement" or sphere of human interaction. Under certain circumstances people within these three distances feel compelled to converse or interact in some way.

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[25]Hall, The Hidden Dimension, p. 158.

[26]Little, "Personal Space," p. 238.

[27]Hall, The Hidden Dimension, pp. 160-168.

[28]Little, "Personal Space," p. 239.

According to Sommer, there is a similarity between personal space and individual distance (which he defined as the characteristic spacing of species members).[29] The two are distinguishable in that individual distance can be defined or "exists only when two or more of the same species are present," while personal space exists as an area around each person regardless of whether or not others are present. "The invasion of individual distance is the violation of society's expectations; the invasion of personal space is an intrusion into a person's self-boundaries."[30] This indicates that proxemics is more individually determined than the social phenomenon of individual distance.

Proxemical Variables

Variables related to proxemics have been delineated by several investigators. For this study they were divided into three major areas:

1. Culture
2. Interpersonal relationships
3. Sex

The following is a review of the literature in these areas as they relate to proxemics.

Culture

Intercultural variations. Studies of spacing in animals indicated that individual distance varies from species to species. The human parallel to interspecies differences is intercultural differences in

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[29] Sommer, Personal Space, pp. 40-51.

[30] Sommer, Personal Space, p. 43.

spacing.

Hall has perhaps conducted the most intense investigation of intercultural differences in space usage. Hall felt that any particular event was not experienced in the same fashion by everyone. He saw culture as a mediator of experiences. Just as men belong to different cultural environments, so do they inhabit different sensory worlds. "Experience as it is perceived through one set of culturally patterned sensory screens is quite different from experience perceived through another,"[31] and thus culture can be considered a type of language; therefore, individuals of different cultures will perceive, experience and use space in different ways. As an example, Hall noted that the Japanese psychologically screen out sound and are perfectly content to be separated from noisy neighbors at inns by only rice paper screens, whereas the Germans, as a rule, consider sound an intrusion and construct their buildings with thick doors and walls.

Hall saw the individual's spatial perception not as a static process but as developing over time. He asserted that there has been a definite development of spatial perception from the two-dimensional murals of the Egyptians to the heightened sense of space in Western man. The distinction between what is actually perceived and the retinal image is a recent spatial development. Medieval art does not seem to recognize this distinction in that background figures are often larger than those in the foreground. Matoré added that spatial perception has now shifted from the geometric imagery of the Renaissance to a "sensation of movement

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[31]Hall, The Hidden Dimension, p. 2.

in space."[32] Thus our perception of space involves kinetic as well as visual cues.

Hall noted many spatial differences between nationalities.[33] Latin Americans and Arabs stand closer together, especially while talking, than do North Americans. North Americans typically stand outside olfactory range, diverting their eyes and breath away from the listener.[34] Such behavior seems distant and "rude" to the Arabs. The Chinese are alienated by being seated on the opposite side of a desk in a face-to-face position. To them this is defined as being on trial. The North American practice of placing furniture around the periphery of the room makes the room look empty to the Japanese who, instead, utilize the center of spaces. "North Americans are a non-contact people with middle range personal spaces,"[35] thus Latin Americans would be considered to have smaller personal spaces; and Englishmen, who generally maintain greater distances, would be considered to have larger personal spaces. As early as 1936, Lewin noted that social distance between people was smaller in the United States than in Germany.[36] Aiello and Jones, using Hall's proxemic notation system, observed that for 210 dyads of first-

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[32]G. Matoré, L'Espace Humain. L'expression de L'espace dans la Vie Pensee et L'art Contemporains (Paris: Editions La Colombe, 1961), p. 251.

[33]Edward T. Hall, "A System for the Notation of Proxemic Behavior," American Anthropologist, LXV (1963), pp. 1003-1026.

[34]O. M. Watson and T. D. Graves, "Quantitative Research in Proxemic Behavior," American Anthropologist, LXVIII (1966), pp. 971-985.

[35]Little, "Personal Space," p. 236.

[36]Lewin, "Some Social-Psychological," p. 11.

and second-graders on the school playground, personal distance was greater among whites than blacks, and greater among blacks than Puerto Ricans.[37] This gave further support to the proposition that intercultural variations in personal distance, and thus proxemic zones do exist.

Intracultural variations. Personal space may vary not only from species to species, but also from individual to individual. Willis concluded that there is sufficient variation in spacing among Americans to make intercultural generalizations inaccurate.[38] With Americans, distant seating is most frequent among strangers and co-acting individuals. In a study by Batchelor and Goethals which allowed subjects to arrange chairs under individual and collective decision-making conditions, not only did chair arrangement differ between conditions, but also within each condition. In other words, each chair was not equally spaced in each condition, but varied with the individual.[39]

Intra-national is perhaps a better term than intracultural, since America contains people from various subcultures and backgrounds. Leipold concluded that people living with greater physical distances (rural) value closeness more highly and see it as warmer than people living in proximity. Possibly urban dwellers, in response to the greater density, have contracted their personal spaces so that intimate,

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[37] J. R. Aiello and S. E. Jones, "Field Study of Proxemic Behavior of School Children in Three Subcultural Groups," Journal of Personality and Social Psychology, XIX (1971), pp. 351-356.

[38] F. N. Willis, "Initial Speaking Distance as a Function of the Speaker's Relationship," Psychonomic Science, V (1966), pp. 221-222.

[39] J. P. Batchelor and G. R. Goethals, "Spatial Arrangements in Freely Formed Groups," Sociometry, XXXV (1972), pp. 270-279.

personal, and social distances are smaller for them than for inhabitants of rural areas.[40]

Interpersonal Relationships

Not only does distance depend on situational circumstances, but also on how people are feeling toward each other. Amourous feelings are signaled by decreasing distance.[41] The names (public, social, personal, and intimate) Hall used to describe the four distances he observed in individuals denoted the type of relationship associated with each one.[42]

Sex Differences

It is generally conceded that males maintain greater distances between themselves than do females, but that males will approach females closer than either they or females will approach males. In a study by Willis, women were approached more closely by both sexes than were men, which supported the finding that women approach each other more closely than they will approach men.[43]

In observations of 210 dyads of first- and second-graders, Aiello and Jones recorded greater personal distances for males than for females.[44] Another observational study involving 859 human subject pairs revealed

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[40]W. D. Leipold, "Psychological Distance in a Dyadic Interview" (Doctoral dissertation, University of North Dakota, 1963), p. 86.

[41]Hall, The Hidden Dimension, p. 162.

[42]Hall, The Hidden Dimension, p. 160.

[43]Willis, p. 222.

[44]Aiello and Jones, "Field Study," pp. 351-356.

that the most distant spacing was between two interacting males while the closest was between female Mexican-American pairs and male-female Anglo or black pairs.[45] Guardo reported "sex-appropriate" behavior in the tracing of silhouette figures.[46] The boys placed a significantly greater distance between referent figures than did girls except when the referent figures were described as someone feared; in this situation the male referent distance was significantly less than the female distance. Such findings are attributed to cultural norms for men and women.[47]

Other spatial sex differences included a parallel in animal behavior cited by Marler who noted that female chaffinches tolerated closer intraspecies distances than males before making aggressive displays.[48] Sommer reported that more males than females sit alone in the library. Using a paper-and-pencil seating arrangement test, Sommer found no sex differences in seating arrangements at the depicted tables, but later he reported observational evidence that females tend to sit closer and use side-by-side seating more frequently than males.[49] Garfinkel had students invade the personal space of friends and acquaintances by bringing their faces right up to the noses of those with whom

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[45]J. Baxter, "Interpersonal Spacing in Natural Settings," Sociometry, XXXIII (1970), pp. 444-456.

[46]C. J. Guardo, "Self-Concept and Personal Space in Children" (Doctoral dissertation, University of Denver, 1966), p. 21.

[47]M. A. Dosey and M. Meisels, "Personal Space and Self-Protection," Journal of Personality and Social Psychology, XI (1969), pp. 93-97.

[48]P. Marler, "Studies of Fighting in Chaffinches: Proximity as a Cause of Aggression," British Journal of Animal Behavior, IV (1956), pp. 23-30.

[49]R. Sommer, "Small Group Ecology," Psychological Bulletin, LXVII (1967), pp. 145-152.

they were conversing. Avoidance and embarrassment reactions were especially prevalent among the male victims.[50] Another experiment showed that the galvanic skin response of subjects was greater when approached by an opposite rather than a same-sex member.[51] Kuethe noted that in contrast to non-homosexual inmates, homosexual inmates often failed to make male-female pairings on his Felt Figure Placement Test.[52]

In summary, male to female and female to female approach distances were smaller than male to male and female to male approach distances.

Proxemics and Interpersonal Communication

The concern of this section of the review of related literature is the human use of proxemics in interpersonal communication. According to Hall, each of us has a personal space bubble that surrounds us.[53] When someone unexpectedly invades this space, we react in a number of different ways, depending on how well we know that person, the circumstances of the invasion and several other important factors.

Hall's research demonstrated that all animals have a protective sphere or "bubble" that they keep around themselves. Enter that bubble and the animal will either flee or attack. Some animals have smaller bubbles than others, usually because of the animal's size and his relative power in an "animal world." For example, a smaller animal such as a

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[50]H. Garfinkel, "Studies of the Routine Grounds of Everyday Activities," Social Problems, XI (1964), pp. 225-250.

[51]G. McBride and others, "Social Proximity Effects on GSR in Adult Humans," Journal of Psychology, LXI (1965), pp. 153-157.

[52]J. L. Kuethe, "Pervasive Influence of Social Schemata," Journal of Abnormal Social Psychology, LXVIII (1964), pp. 248-254.

[53]Hall, The Hidden Dimension, p. 5.

lizard, has a smaller bubble than a larger animal, such as a bear. The powerful lion has a bubble far larger than his size indicates, primarily because of the lion's power in the jungle.[54]

In attempting to correlate this kind of animal behavior with human communication behavior, Hall found strikingly similar findings. Human beings, like animals have a personal space they defend in their day-to-day encounters. If another person comes too close, a person reacts in some manner, probably a visible one.

When given some type of instruction on the subject of proxemics, adults recognize their proxemic territory. Children acquire proxemic behavior at some point in their development of communication. Hall argued that the conventions of proxemic space in communication with others is learned at a very early age. Children learn to use space in their communication much in the same way they learn to use words.[55]

Research in proxemics suggests that young children display some of the proxemic patterns in communication that are typical of adults from a comparable ethnic background. For example, children as young as six years of age maintain about the same distance between themselves and others that adults do, and they use different spacing patterns for communicating with males than with females--again an adult pattern.[56] Just as a child's grammar and vocabulary increase in size and complexity through

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[54]Edward T. Hall, The Silent Language (Greenwich, Connecticut: Premier Books, 1959), p. 64.

[55]Hall, The Silent Language, p. 69.

[56]S. Jones and John Aiello, "Proxemic Behavior of Black and White First-, Third-, and Fifth-grade Children," Journal of Personality and Social Psychology, XXV (1973), pp. 21-27.

the first years of life, so does the child's proxemic communication become increasingly more complex, adapting to situations and other persons.

How Children Learn Proxemic Zones

Principles of proxemics and elementary education were included in a study conducted in a Chicago suburban school.[57] Linda Schiff examined second-grade children's awareness of the four zones of territory outlined by Hall. Two methods were employed:

1. Children were shown a series of absurd pictures in which communication was taking place at an inappropriate distance. For example, a girl was telling a secret in the personal zone instead of the intimate zone, or two people were talking intimately from a social distance. The children were told that there was something "silly" about the picture and were asked to identify what it was.

2. Children were presented groups of three pictures, each group containing pictures of similar communication situations. Two of the three pictures were alike in terms of proxemic distance, and one was different. Other features of the pictures (such as the persons included, their dress and their bodily positions) were held constant. The children were asked to find the picture that was different.

The researcher concluded that seven-year old children were aware of proxemic absurdities in both the intimate and personal zones. They were fairly good at isolating the "different" picture in a set of three, when the pictures illustrated the intimate and personal zones. The

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[57]Linda Schiff, "A Study of Proxemics for Elementary Education" (Master's thesis, University of Illinois at Chicago Circle, 1973), p. 43.

pictures illustrating the social and public zones caused difficulties for second-graders. The study also involved a three-day instructional program. In this program researchers attempted to determine whether children would benefit from proxemic instruction. Part of the program focused on explanations and role playing of communication activities in the four zones. After three days of instruction children still experienced difficulties with the social and public distance questions. Their overall test scores were significantly better following the instruction; however, the children found the intimate and personal distances easier to talk about than the social and public distances.

To explain why the second graders had difficulty with the social and public zones, a number of possible explanations were offered including the following major ones:

1. Children talk with other children and adults in much closer distances than adults do. Children hug, cuddle and generally stay close to others when they communicate. Since their communication typically occurs in the closer zones, children are more aware of deviations from these norms.

2. Children have had more experience with activities and situations that occur in the closer proxemic zones than in the far-distance zones (social and public). The closer zones are reasoned to be more relevant to their experiences than the far-distance zones. Experiences may explain the differences in awareness.[58]

Schiff's study provided some data for speculation on children's acquisition of the zones of territory. It was suggested that children may learn the "rules" for the zones of territory in a step-by-step

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[58]Schiff, p. 61.

fashion. They may become aware of human distance behavior in the intimate zone first, because from infancy they are most closely involved with touching, proximity and activities related to the intimate zone. Children may become aware of the personal zone when they begin to socialize, attend school, and engage in personal activities with their peers. Communication in the intimate and personal zones are probably well developed in the early elementary school years. As children gain new experiences, such as working in groups, they experience social situations of a more organized nature, in which proxemic rules of the social zone begin to form. With experience in formal settings, as in talking to an audience, children develop an awareness of distance in public communication.[59] Barbara Wood proposed a four stage progression of proxemic development in children which was based on the four proxemic zones. These stages are outlined in Table 1, page 29.

In addition to learning the proxemic zones, children learn proxemic "conventions" typical of adult communication. Further study of children's acquisition of interpersonal spacing concepts has taken three directions:

1. The comparison of children from different cultural groups regarding proxemic conventions.

2. The comparison of boys and girls in their interpersonal spacing patterns in communication.

3. The comparison of elementary-school children of different ages

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[59]B. S. Wood, Children and Communication (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1976), p. 239.

Table 1

Children's Acquisition of Proxemical Zones[60]

Age	Zone	Explanation
Birth to 3 years	Intimate	Children learn the closeness of communication with their mothers, other members of their family, and caretakers. They engage in touch, desire hugging and profit from "close" communication.
3 to 7 years	Personal	With their acquisition of language, children become full-fledged communicators. They talk to others, usually on a personal basis. Much of their activity is self-centered (egocentric) and they have not acquired an understanding of socialization to any great extent.
7 years and older	Social	When children become more social as opposed to egocentric, they form strong social relationships. They learn how to behave in social settings, and they understand social relationships.
7 years and older	Public	Older children acquire an awareness of a "public" type of communication, particularly if the school setting offers the opportunity for performing in a public situation.

[60] B. S. Wood, Children and Communication (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1976), p. 239.

regarding their proxemic communication.[61]

Sex Differences in Proxemic Patterns

In studies of interpersonal spacing with adults it was found that almost without exception, males differ from females in their directness (shoulder orientation) in communication. Two important focal points for studying interpersonal spacing in communication are:

1. The distance (in feet and inches) between the participants.

2. The shoulder orientation (the proxemic axis) between the participants. Axis measurements are based on the "clock position" of the shoulders--for example, 12:00 indicates parallel shoulders in face-to-face communication.[62]

Stanley Jones found that the interpersonal spacing of blacks and Puerto Ricans, Chinese, and Italians demonstrated sex differences that were consistent across these subcultural groups in New York City.[63] In all cases, males communicated with a less direct shoulder orientation than females. Women faced each other more directly than males did in their communication.

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[61] Wood, pp. 237-238.

[62] Wood, p. 240.

[63] S. Jones, "A Comparative Proxemics Analysis of Dyadic Interaction in Selected Subcultures of New York City," Journal of Social Psychology, LXXXIV (1971), pp. 35-44.

Interpersonal Spacing of Children: Sex Differences

Jones and Aiello conducted two studies focusing on the interpersonal spacing patterns of young children. In a study with first- and second-grade children from three ethnic groups--Puerto Rican, black and white--they found that white boys stand farther apart than white girls but that this difference did not occur with Puerto Ricans and blacks.[64] The middle class boys and girls in the study communicated at different distances. Sex differences in communication is acquired at an early age by white, middle-class children because of the greater emphasis placed on appropriate gender roles in the homes. The shoulder orientation results were inconsistent with adult norms; girls exhibited less direct shoulder orientation than boys.

In a second study conducted by Jones and Aiello with first-, third- and fifth-grade children (blacks and whites), it was found that boys were less direct than girls in shoulder orientation.[65] These results fit the adult norms. Sex differences in interpersonal spacing begin to emerge after the first-grade and are most obvious around the fifth-grade. Differences in shoulder orientation between boys and girls were more pronounced with fifth-graders than with either first-graders or third-graders. The directness of communication by fifth-grade children was comparable in terms of shoulder orientation with norms exhibited by adults.

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[64]Aiello and Jones, "Field Study," pp. 351-356.

[65]Jones and Aiello, "Proxemic Behavior," pp. 21-27.

The Meaning of Sex Differences in Children's Proxemic Communication

That very young white middle-class children "learn" sex differences in proxemic communication, as demonstrated in their proxemic patterns, illustrated the greater emphasis placed on gender display by the American culture. Proxemic conventions typical of adults within any cultural group are exemplified by young children in that social group sometime in their elementary-school years. Comparing boys and girls, the major difference in interpersonal spacing was attributed to the communication axis, or the directness of communication. Sometime in the early elementary years the children demonstrate proxemic patterns of communication typical of adults in their cultural group. Deviations from these interpersonal spacing patterns cause difficulties for a child. Teachers must be aware of developmental trends in proxemics in order to cope with these potential difficulties.[66]

Sex, Setting and Personal Space: Changes as Children Grow Older

Price and Dabbs discussed the results of their study in which they examined the effects of age, sex, and setting on interpersonal physical distance preferences among one hundred-sixty, first-, fifth-, ninth-, and twelfth-grade white, public school students.[67] Within each grade, subjects were tested two at a time in same-sex pairs. Subjects'

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[66]Wood, p. 241.

[67]G. Price and J. M. Dabbs, "Sex, Setting and Personal Space: Changes as Children Grow Older" (Paper presented at the annual meeting of the American Psychological Association; 82nd, New Orleans, Louisiana, August 30 - September 3, 1974).

Interpersonal Distance Preferences (IPD) were tested by both direct and indirect modes of measurement in "corner" and "center" settings. Indirect measures were poorly correlated with the direct measures and showed no effects. Analysis of the direct measures indicated that IPD was greater among older than among younger children; greater among males than females; and greater in the corner than in the center setting. There were also significant interactions of age with sex and with setting. Sex differences were less marked among younger than older subjects. Younger and older subjects reacted differently to the corner and center settings, with youngest children maintaining closer IPD in the corner setting and all other subjects maintaining closer IPD in the center setting.

Listening Comprehension as a Function of Proxemic Distance

Sherman studied the effects of different levels of interpersonal space (proxemics) and eye-contact upon thirty-four fourth-graders' listening comprehension of verbal messages.[68] "The Sequential Tests of Educational Progress: Listening" was administered under three levels of interpersonal space (intimate, conversational, and far) and two levels of eye-contact (no eye-contact and eye-contact). A two way fixed analysis of variance yielded a significant main effect due to interpersonal space ($p < .01$) with no significant effect due to eye-contact. Results supported the importance of proxemics to educative practices and suggested that intimate distances be established by teachers for effecting maximum listening comprehension. The findings of a higher cell mean for the no

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[68] E. Sherman, "Listening Comprehension as a Function of Proxemic Distance and Eye-Contact," Graduate Research in Education and Related Disciplines, VII (Fall, 1973), pp. 5-34.

eye-contact, twenty-feet condition was considered either entirely spurious or due to the possibility that listening at far distances required more attention which was diluted if eye-contact were also in effect.

Summary

The review of related literature was divided into three major sections. The section entitled Conceptual Background was presented in order to define the concept of proxemics for the reader. It included both the psychological and the physical bases for an understanding of the phenomenon of proxemics.

The section entitled Proxemical Variables was included in the review of literature to present evidence of the importance of proxemics in human cultures. The role of proxemics in interpersonal relationships, and the differences in proxemic placement between males and females were also presented.

The final section--Proxemics and Interpersonal Communication--was written to provide the reader with specific educational research findings dealing with the concept of proxemics. Of special significance to the present study were the findings that:

1. Proxemic zones are learned by children in a step-by-step fashion.

2. Sex-appropriate proxemic roles are developed by children in much the same way as verbal language is developed.

3. Proxemic patterns change as children grow older.

4. Different levels of interpersonal space affect the listening comprehension of verbal messages.

Chapter 3

METHOD

Design

The design was selected to determine the effects, if any, on teaching effectiveness of variations in proxemical distance between instructor and students. The design employed a variation of the post-test-only-control group design proposed by Campbell and Stanley.[1] The structure of the experiment may be diagrammed as follows:

R	X_1	0
R	X_2	0
R	X_3	0
R	X_4	0
R	(X)	0

There were four treatment groups and one control group. The control group received a pseudo-treatment to control for Hawthorne Effect. The manipulated independent variable for the four treatment groups was the introduction of varying distances into the instructional situation. The distances were defined in proxemical terms as: intimate proxemic zone, personal proxemic zone, social proxemic zone, and public proxemic zone.

Group X_1 received instruction within the intimate proxemic zone. Group X_2 received instruction within the personal proxemic zone. Group X_3

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[1] D. Campbell and J. Stanley, Experimental and Quasi-Experimental Designs for Research (Chicago: Rand McNally College Publishing Co., 1963), p. 25.

was provided instruction in the social proxemic zone. Group X_4 was presented instructional material in the public proxemic zone. The control group received the pseudo-treatment, which consisted of showing two films unrelated to the dependent variable. Synopses of the two films are in Appendix C, page 68.

The dependent variable for the five groups was the mean of scores on a post-test over the content delivered during the treatment phase. Three assigned independent variables of age, sex, and grade level were controlled by stratified random sampling. Other elements in the experimental situation such as sex of the instructor, facilities, teaching method, and content of the instruction were held constant across all treatment groups.

It was proposed to analyse the data collected from the study by an application of one-way analysis of variance (ANOVA) and the Newman-Keuls Table of Ordered Means. The following null hypothesis was tested for the $p < .05$ level of significance.

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = (\mu)$$

Subjects

A population of 181 sixth-, seventh- and eighth-grade students from the East Tennessee State University Laboratory School were available to participate in the experiment. A sample of 120 subjects was selected by a stratified random sampling process and randomly assigned to one of the five groups described in the design of the study. The stratification provided that all groups were balanced in terms of the variables of age, sex, and grade level. The assumption was made that age and grade level were highly correlated, so the actual age of the participating subjects

was not determined. Each of the five groups was constituted as follows:

A total n of 24 students consisted of:

Four sixth-grade males

Four sixth-grade females

Four seventh-grade males

Four seventh-grade females

Four eighth-grade males

Four eighth-grade females

No group received treatment at one seating, instead, within each group subjects participated in the experiment four at a time. This was necessitated by spatial and temporal limitations. It was not feasible, for example, for the investigator to interact with more than four subjects at one time in the intimate proxemic zone--the distance being zero to eighteen inches. It was deemed necessary to retain this arrangement of instructing four subjects per seating for all groups to control for differences that may have resulted as a consequence of varying class size.

A super-numeraries group was randomly assigned from the remaining sixty-one students. The students assigned to the super-numeraries group were available for participation in the experiment in cases of absenteeism of any subjects from the sample of 120 subjects.

Facilities

The experiment was conducted in a small classroom at the East Tennessee State University Laboratory School. The size of the classroom was approximately 12 feet x 9 feet x 9 feet. There were three windows situated on two walls of the room and a small window in the one door that provided access to the main corridor of the first floor of the building.

The room was at one end of the building and the noise level in the room was somewhat less than in other parts of the building. Since the same room was used for all treatment groups and the control group, the amount of distracting stimuli was assumed to be similar for all subjects.

One table with four chairs was provided for the subjects (Ss). The table was trapezoid-shaped with the dimensions of 36,24x15x30 inches. The researcher conducted the experiment from a chair placed at varying distances from the front of the table.

The instructor's chair was placed at a distance of:

1. Fifteen inches from each of the students who sat at the table when presenting instruction in the intimate proxemic zone.

2. Two and one-half feet from the table at which the students sat when instructing from the personal proxemic zone.

3. Eight feet from the table where students sat during the presentation of material in the social proxemic zone.

4. Fifteen feet away from the table at which students were sitting when instruction was provided in the public proxemic zone.

The control group was seated at the table and given the pseudo-treatment at distances which approximated the distance dimensions of the social proxemic zone (four feet to twelve feet).

Four side-arm desks were placed around the periphery of the classroom to provide individual seating for the students during the testing phase of the experiment.

Instrumentation

A narrative on the purposes, functions, and organization of the United Nations was written by the investigator. A copy of the narrative

is presented in Appendix A, page 59. The narrative was memorized by the researcher and presented to each of the four experimental groups. The narrative was not used as part of the instruction for the control group.

A twenty-item objective post-test was constructed from the United Nations narrative material. The post-test consisted of four parts with five items in each section. A copy of the United Nations post-test is included in Appendix A, page 63.

Pilot Study

A pilot study was conducted by the researcher using the narrative and post-test described previously. Since a "true" pilot study usually engages subjects from the population of a proposed study, the investigator chose to do a parallel or pilot study using subjects from a different population. This was done in order to avoid any contamination of the results of the present study.

Subjects were chosen for the pilot study from volunteer fifth-, sixth-, seventh-, and eigth-grade students enrolled in a Western North Carolina school. The purpose of the parallel study was to determine and correct weaknesses in the instrumentation and procedures prior to conducting the experiment.

Procedures

Ss were randomly assigned to one of the five conditions described in the design of the study. Each subject participated in the study during one period of a six period day. The students who had been randomly assigned to a particular group were instructed via the intercommunications system of the East Tennessee State University Laboratory School to report to the classroom in which the experiment was to take place.

Because of the logistical problems of rearranging the table and chairs in the classroom to accomodate the varying distances involved in the study, no random sequencing of groups, nor random sequencing of cells within each group was provided. Consequently, all Ss participating on a given day and during a given period of that day were in the same experimental or control condition. They participated in the study in groups or cells no larger than four in number.

As Ss entered, they were invited to sit in any one of the four student positions. The experimenter sat across the specially constructed table facing the group. The student's task was related by means of formal instructions presented by "live" reading as opposed to taped or written instructions.

During the experiment, the task of the Ss was to react to the stimuli of instruction presented on the United Nations. The session consisted of lecture, questions, and answers in which the instructor and the participants interacted. The response task of the Ss was to complete the twenty-item, objective post-test concerning the content of the instructional phase. The total time for all experimental conditions was thirty minutes per treatment. The pseudo-treatment took approximately twenty-five minutes.

Chapter 4

RESULTS AND DISCUSSION

Results

Post-test scores provided the basic data for the present study. The raw scores (number of correct responses to the twenty-item objective test on the United Nations) are arrayed by group in Appendix E, page 72.

These data were keypunched into IBM 80-column cards and read into the IBM 370 memory bank at the East Tennessee State University Computer Center. They were analyzed by an SPSS (Statistical Program for the Social Sciences) which computed a one-way analysis of variance (ANOVA) of the data.

The mean post-test scores for each of the five groups is shown in Table 2, page 42. The ANOVA summary is presented in Table 3, page 42. As shown in that table the difference between the extreme means of the five treatment groups was significant at the .05 level. The ANOVA was followed by a Newman-Keuls test of ordered means to determine the pairwise significance of differences ($p < .05$) for the five group means. The outcome of this analysis is presented in Table 4, page 43. There was a significantly superior difference between all treatment groups (X_1, X_2, X_3, X_4) and the control group at the .05 level. Also, a significant difference occurred between X_1 (the treatment group in which students were instructed in the intimate proxemic zone) and all other experimental groups (X_2, X_3, X_4).

Table 2

Mean of the Number of Correct Responses to the 20-Item Post-test on the United Nations

Group	Mean
X_1	17.75
X_2	15.79
X_3	15.46
X_4	14.54
(X)	11.25

Table 3

One Way Analysis of Variance of Post-test Scores of Five Groups of 24 Subjects Total N = 120

Source of Variance	df	Sum of Squares	Mean Squares	F
Between groups	4	543.9167	135.9792	15.024*
Within groups	115	1040.8738	9.0511	
Total	119	1584.7903		

*$p < .05$

Table 4

Newman-Keuls Table of Ordered Means for United Nations Post-test
($k = 5$, $N_{MIN} = 24$, $MS_W = 9.0511$)

Groups		(X)	X_4	X_3	X_2	X_1	q.95 (r, 115)	$(S_{\bar{t}})$ q.95 (r, 115)
	Means	11.25	14.54	15.46	15.79	17.75		
(X)	11.25		3.29*	4.21*	4.54*	6.50*	3.92	2.39 (r = 5)
X_4	14.54			.92	1.25	3.21*	3.69	2.25 (r = 4)
X_3	15.46				.33	2.29*	3.36	2.05 (r = 3)
X_2	15.79					1.96*	2.80	1.71 (r = 2)
X_1	17.75							

*$p < .05$

The general null hypotheses H_0: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = (\mu)$ was rejected in part. The group that was instructed in the intimate proxemic zone (X_1) generated a mean score that was significantly superior to all other experimental groups and the control group. This part of the general null hypothesis was rejected. Groups X_2, X_3 and X_4 (students instructed in the personal, social, and public proxemic zones, respectively) generated means that were significantly superior to the control group (X). There were, however, no significant mean differences between X_2 and X_3; X_2 and X_4; or X_3 and X_4.

Discussion

Results of this study did not provide absolute guidelines for distances in which instruction should be provided. The fact that there was no evidence of differences in effectiveness in the personal, social, and public proxemic zones, does not mean that there are no conditions under which instruction in these zones might be more effective. However, the instruction presented in the intimate proxemic zone proved to be the most effective when compared to presentations made in every other proxemic zone.

The comparisons made in analyzing the general null hypothesis resulted in partial rejection of that hypothesis as indicated in the section entitled Results. The finding of a significant effect due to providing instruction in the intimate proxemic zone clearly demonstrated that children comprehend more when they are placed nearer to the instructor. From an examination of all post-test means there also seemed to be a direct positive relation existing between test performance and the distance between student and instructor. This finding confirmed previous

research into the importance of proxemics among animal populations and human beings who live within a kind of portable bubble of a minimum, necessary space which is basic to their physical and psychological well-being.

One of the research hypotheses anticipated that the significantly greatest effect of proxemic zones would occur at the intimate distance of zero to eighteen inches. This implies that, under conditions of intimate distance, communication is greatly facilitated. Subjects are more likely to give closer attention to activities within their proxemical sphere. It is also probable that there develops a heightened receptivity which occurs within the intimate proxemic zone owing to the increased difficulty to shift one's focus to another object of attention. When an instructor is five feet away it is probably easier for the student to ignore what is being said than when that individual is within the intimate proxemic sphere of the student. This is not; however, to be taken as an unvarying directive. It may be that prolonged involvement at intimate distances may have other effects upon subjects.

Part of the general null hypothesis was accepted. The Newman-Keuls analysis did not indicate a significant mean difference between groups instructed in the personal, social, and public proxemic zones. The distances involved within these proxemic zones may be great enough to allow outside stimuli to disrupt the effectiveness of communication. In these proxemic zones, it may be easier for subjects to become distracted by stimuli outside the learning environment. It probably becomes easier for subjects to ignore what is being said within the personal, social, and public zones than within the intimate proxemic zone. Also, the effect of kinesic communication probably diminishes as the distance

between individuals increases. Within the intimate proxemic zone, bodily communication probably has more affect on the ability of an individual to comprehend another's meaning than in the other proxemic zones. This is most likely due to the increased vision of bodily movements within the intimate proxemic zone. In the other zones, it may be easier to ignore many of the speaker's kinesic actions.

An examination of post-test means indicated progressively decreasing means for post-test means of the personal, social, and public proxemic zones. A possible explanation for this phenomenon is that the sample selected for the present study was not large enough to indicate the effectiveness of instruction presented within the personal, social, and public proxemic zones.

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

There has been a growing interest in the behavioral aspects of proxemics considered as part of the human environment in the educational setting. Despite conflicting data and a frequent lack of experimental control in much of the proxemic research, evidence was available that this non-verbal behavior may be an important variable in the teaching/learning process. It was shown that proxemics was influenced by sex. Male-female pairs required less personal space than female-female pairs, who in turn require less than male-male pairs. The paucity of research on developmental aspects of proxemics suggested that children develop spatial norms which have a regular sequence. Cross-cultural data suggested that proxemic patterns differ from culture to culture. The preponderance of data suggested that proxemics differ among individuals, in that persons who are friendly with each other or wish to communicate a positive affect will tend to interact in closer proxemic zones than those who are seen as not friendly.

The problem of this study was to assess the effects of intimate, personal, social, and public proxemic zones on the performance of selected sixth-, seventh- and eithth-grade students.

The 120 subjects of this study were randomly selected subjects from an entire sixth-, seventh- and eighth-grade population of 181 ETSU

Laboratory School students. The subjects were randomly assigned to four treatment groups and one control group.

Experimental group X_1 consisted of twenty-four students who were instructed in the intimate proxemic zone. Experimental group X_2 was comprised of twenty-four students who were instructed in the personal proxemic zone. Experimental group X_3 involved twenty-four students who were presented instructional material in the social proxemic zone, and experimental group X_4 consisted of twenty-four students instructed in the public proxemic zone. Control group (X) also consisted of twenty-four students who were shown unrelated films as a pseudo-treatment to control for the "Hawthorne Effect."

The post-test was a twenty-item mixed questionnaire concerning the purposes, functions, and organization of the United Nations. It was distributed to the subjects at the conclusion of a thirty-minute instructional period.

Differences between means of post-test scores of the five groups were tested for statistical significance in a one-way analysis of variance. Pair-wise comparisons between groups were tested by a Newman-Keuls Test. The .05 level of significance was adopted in all cases.

Results

Results of the data analysis indicated that the mean post-test scores of the students instructed in the four proxemic zones (intimate, personal, social, and public) were significantly superior to the mean post-test score of the control group. The mean for students instructed in the intimate proxemic zone was significantly superior to the means for students instructed in the personal, social, and public proxemic

zones.

Pair-wise Newman-Keuls comparisons between means indicated that:

1. There was no significant difference between the post-test mean of students instructed in the personal proxemic zone and the post-test mean of students instructed in the social proxemic zone.

2. There was no significant difference between the post-test mean of students instructed in the personal proxemic zone and the post-test mean of students instructed in the public proxemic zone.

3. There was no significant difference between the post-test mean of students instructed in the social proxemic zone and the post-test mean of students instructed in the public proxemic zone.

Conclusions

The results of the experiment provided evidence that the effectiveness of instruction was greatest when presented in the intimate proxemic zone. Although the Newman-Keuls analysis did not indicate significant mean differences, an examination of post-test means indicated progressively decreasing means for the personal, social, and public proxemic zones--the scores being 15.79, 15.46 and 14.54, respectively. A tentative proposition indicated by this array of means is: the closer instructors distance themselves to students, the more effective the instruction will be.

Recommendations

As a result of the study it was recommended that:

1. additional studies be made varying proxemic distances to further determine the effects of these zones on the performance of

students.

2. additional studies be made using proxemic concepts with students at age levels different from those of this study.

3. research be conducted to determine the prolonged effects of presenting instructional material in the intimate proxemic zone.

4. research be conducted to determine students' preferences in self-placement within proxemic zones. It may be that students select for themselves a distance which is optimal for their own particular learning.

5. exploration be made to assess the effects of actual body contact upon the instructional situation and to see what effects it has upon the communication and reception of information.

6. research be engaged in to determine the importance of proxemics as a factor in learner analysis.

7. the same study be replicated to determine the validity of the findings described in the present study.

8. research be conducted to further explain the lack of significant findings of the effectiveness of instruction in the personal, social, and public proxemic zones.

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APPENDIXES

APPENDIX A

CONTENT MATERIAL USED IN INSTRUCTION OF STUDENTS

CONTENT MATERIAL USED IN INSTRUCTION OF STUDENTS

Social Studies Unit--The United Nations

Objectives

At the conclusion of this instructional period students should be able to:

1. Match the United Nations organ with its primary responsibility.

2. Choose from a given list, five of the chief ways in which the United Nations works for peace.

3. Complete, with a word, a number, or a phrase, incomplete sentences concerning the purposes, organization and function of the United Nations and its agencies.

4. Determine the truth or falseness of sentences concerning the purposes, organization and functions of the United Nations and its agencies.

Content Material to be Presented

Many people have asked the question: What is the United Nations? This is not a difficult question to answer. However, it is important to know exactly what the U.N. is--and what it is not. Because of their lack of knowledge of this subject, many people blame the United Nations for not doing things which it has no power to do. Therefore, before studying anything about the organization, we should learn something about what the U.N. is meant to be.

The U.N.'s Purposes

The United Nations was set up to protect and strengthen the peace of the world. Those who wrote the Charter knew that peace among nations depends upon many different factors. So, to enable the U.N. to do the best possible job in keeping the peace, the organization was built to work for peace in many ways. The following are the chief ways in which the United Nations works for peace. It provides:

1. A place and means for talking over problems bothering nations.
2. Methods by which nations may work together to solve problems.
3. A plan for peaceful settlement of disputes by international law.
4. Means for stopping warlike nations planning harm to neighbors.
5. Ways to help nations improve their economic and social conditions and to increase the rights of their peoples.
6. Machinery for guarding the welfare of non-self governing peoples.
7. Ways to develop better relations among nations through the sharing of knowledge, improvement in education and better communication between the people of the world.

The U.N.'s Powers

The United Nations is not a world government. It is a voluntary organization of nations cooperating to promote peace and security. The U.N. has no authority to give orders to nations. It can suggest plans, which nations may or may not accept as they please.

The U.N. may issue orders to nations in only one situation. If a nation attacks a neighboring nation for any reason, the United Nations

may order it to call back its armies. If the attacking nation fails to obey, the U.N. may request member nations to send armies against the aggressor.

Because it is not a world government, the United Nations can accomplish only what the member nations are willing to carry out voluntarily.

United Nations Membership

The United Nations started with the fifty nations which signed the Charter at San Francisco. These were the nations which had fought together during World War II. They had been united in war under the same name--United Nations.

Additional nations have become members since the U.N. was organized. Their memberships had to be recommended by the Security Council and approved by the General Assembly.

U.N. Organization

Those who planned the U.N. and wrote its Charter set up the kind of organization which would do what needs to be done. The following are the important jobs and the organs primarily responsible for them:

Gudiance for the U.N.--THE GENERAL ASSEMBLY. This organ is the directing power of the United Nations. Every member nation is represented and has a vote in the General Assembly. The Assembly has authority over all U.N. business and all organs except the Security Council and the International Court of Justice. It may consider any problem which arises except when the Security Council is already considering it.

Action for Peace--THE SECURITY COUNCIL. The Security Council may take any steps necessary for keeping the peace. It also has the authority to use armed force against aggressor nations. Because of its responsibility for taking action, the Security Council was limited to eleven members so that it might act more quickly.

Improving Living Conditions--THE ECONOMIC AND SOCIAL COUNCIL. The chief job of the Economic and Social Council is to suggest and plan steps by which the living conditions of all nations may be improved. The members of the Council consider all matters which affect economic and social conditions.

THE SPECIALIZED AGENCIES. The Specialized Agencies are linked with the U.N. through the Economic and Social Council. They are independent, but each has a special agreement with the U.N. approved by the General Assembly and the agency. Each agency works in a special field--refugee, health, food, aviation, labor, etc. Nations may join any of the specialized agencies if they wish whether they are members of the U.N. or not.

Legal Settlement of Disputes--THE INTERNATIONAL COURT OF JUSTICE. Over the centuries, nations have worked out certain rules which they generally follow in their relations with each other. These rules were not agreed upon at meetings--they just grew up--but they are the basis of international law. The International Court of Justice uses this law to settle disputes which nations bring before it for settlement. The Court also serves as United Nations legal adviser.

Post-test

Name _____

Score _____

THE UNITED NATIONS

I. Matching

____	1. The Specialized Agencies	A.	Takes action for keeping peace.
____	2. The General Assembly	B.	Suggests and plans steps by which the living conditions of all nations may be improved.
____	3. The International Court of Justice	C.	Settles disputes which nations bring before it.
____	4. The Security Council	D.	Work in special fields such as refugee, health and food.
____	5. The Economic and Social Council	E.	Directs the total United Nations power.

II. Circle 5 answers below that best complete the statement.

The chief ways in which the United Nations works for peace are:

1. Providing methods by which nations may work together to solve problems.
2. Providing a world government for all nations.
3. Providing ways to help nations improve their economic and social conditions.
4. Providing guns and ammunition for all nations.
5. Providing a place and means for talking over problems bothering nations.
6. Providing a plan for peaceful settlement of disputes by international law.
7. Providing means for stopping warlike nations planning harm to their neighbors.
8. Providing money to any nation that asks for it.

III. Fill in the blank.

1. The United Nations was set up to protect and strengthen the _____ of the World.
2. The United Nations started with the (number) _____ nations which signed the Charter at San Francisco.
3. New memberships in the United Nations have to be recommended by the Security Council and Approved by the _____ _____.
4. Nations may join any of the _____ agencies if they wish whether they are members of the United Nations or not.
5. The International _____ ___ _____ serves as legal adviser to the United Nations.

IV. True or False (Use T for True answers and 0 for False answers)

____ 1. All United Nations members have delegates in the General Assembly.

____ 2. The United Nations is not a world government.

____ 3. The Security Council is the only United Nations organ that helps keep world peace.

____ 4. The United Nations may order nations to stop attacks upon nations.

____ 5. The United Nations can work for peace in only one way--by preventing wars between nations.

APPENDIX B

INSTRUCTIONS TO STUDENTS

Instructions to Students

Instructions to Students in Experimental Groups

Good Morning (Afternoon) Students. First of all, I would like to ask you not to move the chairs from the positions in which they are now arranged. It is very important that you leave them as they are. I will be presenting to you a Social Studies lesson. At the end of my presentation, you will be given a short quiz to see if I have presented the material to you in such a way to allow you to learn the material. The grade that you make on the quiz will in no way affect your grades at _____ School. However, I would like to ask that you do as well as you can on the quiz. If you would like to know your score on the quiz, I will be happy to give that to you when I finish grading all of the quizzes I will be giving. Do you have any questions before we begin?

Instructions to Students in Control Group

Good Morning (Afternoon) Students. First of all, I would like to ask you not to move the chairs from their positions. It is very important that you leave them as they are. I will be presenting to you two films. At the end of the showing, you will be asked to complete a short quiz that deals with a Social Studies topic. I would like to see how much you know about that topic. The grade that you make on the quiz will in no way affect your grades at _____ School. However, I would like to ask that you do as well as you can on the quiz. If you would like to know your grade on the quiz, I will be happy to give that to you when I finish grading all of the quizzes I will be giving. Do you have any questions before we begin?

APPENDIX C

SYNOPSES OF FILMS

Synopses of Films

Film 1

"Where the Wild Things Are," Weston Woods, 1974, 10 minutes, color.

"Where the Wild Things Are" is a film version of Maurice Sendak's Caldecott Award book.

Film 2

"How the Elephant Got His Trunk," Learning Corp. of America, 1970, 10 minutes, color.

"How the Elephant Got His Trunk: is based on the story, The Elephant's Child, by Rudyard Kipling. It is a filmed animated version of Kipling's Just So Story in which a young elephant learns the price and reaps the rewards of curiosity.

APPENDIX D

RAW SCORES OF SUBJECTS FROM THE PILOT STUDY

Table 5

Post-test Raw Scores of Subjects
of Pilot Study

Proxemic Zones

Intimate	Personal	Social	Public
12	7	5	9
13	7	12	4
10	19	16	13
15	18	10	11

$\underline{n}$ = 16

The sample for the pilot study was volunteer fifth- through ninth-grade students from Western North Carolina.

APPENDIX E

TABLE OF POST-TEST RAW SCORES

Table 6

Raw Scores on a United Nations Post-test for Subjects Taught in Four Proxemic Zones and a Control Group

Group	X_1	X_2	X_3	X_4	(X)
Proxemic Zone	Intimate	Personal	Social	Public	Control
	20	20	20	20	17
	20	20	19	20	16
	20	20	19	20	16
	20	20	18	18	15
	20	20	18	18	14
	20	19	18	18	14
	20	18	17	17	13
	19	17	17	17	13
	19	17	17	17	13
	19	17	17	15	12
	19	17	17	15	12
	19	17	16	15	11
	18	15	15	15	10
	18	15	15	14	10
	17	14	15	13	10
	17	14	14	13	10
	17	14	14	13	10
	16	13	14	12	9
	16	13	13	11	9
	16	13	13	11	8
	15	13	12	11	8
	14	12	11	10	8
	14	12	11	10	6
	13	9	11	6	6
ΣX	426	379	371	349	270

VITA

VITA

Joseph Franklin Miller was born in Boone, North Carolina, on June 1, 1949. His family and he later moved to Kingsport, Tennessee, where he attended both grade school and high school. In 1967, he entered East Tennessee State University in Johnson City, Tennessee, and at the same time worked as a postal clerk in Kingsport, Tennessee, for a period of four years from 1966-1970, and as a computer operator for Giant Wholesale, Inc., in Johnson City for a period of three years, from 1971-1973. He was granted a B.S. in English and history in 1973, and began the course work for a masters degree that year. He taught at North Elementary School, Pelham, Georgia, for one year, 1973-1974. In August of 1974, he graduated with a M.A. in instructional communications and education from East Tennessee State University. For a two year period, from 1974-1976, he taught at Cove Creek Elementary School in Sugar Grove, North Carolina, and during that time received an Ed.S. in educational leadership and educational media from Appalachian State University in Boone, North Carolina. From 1976-1977 he served as an assistant professor of elementary education at Appalachian State University. From there he returned to East Tennessee State University where he was granted a doctoral fellowship for the period 1977-1978. During that time he served as the coordinator of closed-circuit television in the education building and as a coordinator for student teachers. He was granted the Ed.D. degree in educational supervision in August, 1978. He presently serves as principal of Green Valley Elementary School in Boone, North Carolina.